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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Christopher J. Kemp

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06/30/2004

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EXAMINER

RIOS CUEVAS, ROBERTO JOSE

ART UNIT

PAPER NUMBER

2836

DATE MAILED: 06/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/751,993

Applicant(s)

KEMP ET AL

Examiner

Roberto J Rios

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-13 and 16-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-13 and 16-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. In view of the Appeal Brief filed on 01/26/2004, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 8, 9, 11, 19, 21 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Torregrosa (US patent 5,600,066).

As per claim 1, Torregrosa teaches an apparatus comprising an input block (70) to apply an input signal to a common input terminal (14) of a sensing block (1), the input block coupled to apply a first signal to the common input

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terminal during a first clock phase (H) and a second signal during a second clock phase (H); and a converting block (30) to receive a sensed signal from a sensing block in response to the input signal.

As per claim 2, Torregrosa teaches the converting block being coupled to provide an output signal ( $U_s$ ) based on the sensed signal.

As per claim 8, Torregrosa teaches the input block comprising a first input capacitor ( $C_{n1}$ ) and a second input capacitor ( $C_{n2}$ ), wherein the input block is coupled to provide a first input signal to the converting block through the first input capacitor and a second input signal to the converting block through the second input capacitor (Figure 5).

As per claim 9, Torregrosa teaches the input block being coupled to provide the first input signal through the first capacitor and the second input signal through the second capacitor (Figure 5).

As per claim 11, Torregrosa teaches a method comprising providing a first signal to a common input terminal (14) of a sensing block (1) during a first clock phase (H, high) and a second signal to the common input terminal during a second clock phase (H, low), wherein the first clock phase and the second clock phase have non-overlapping clock cycles (H-high/low); receiving a sensed signal from the sensing block based on providing the first signal and the second signal; and providing a signal ( $U_s$ ) based on the sensed signal.

As per claim 19, Torregrosa teaches an apparatus, comprising: an input block (70) to provide an input signal to a common terminal (14) of a first capacitor and a second capacitor of a sensing block (1); and a converting block (30) to

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receive a sensed signal from the sensing block in response to applying the input signal.

As per claim 21, Torregrosa teaches the input block being coupled to apply a first signal to the common input terminal during a first clock phase (H) and a second signal during a second clock phase (Figure 5; col. 6, lines 18-38).

As per claim 22, Torregrosa teaches the input block comprising a first input capacitor (Cn1) and a second input capacitor (Cn2), wherein the input block is coupled to provide a first input signal to the converting block through the first input capacitor and a second input signal to the converting block through the second input capacitor (Figure 5).

4. Claims <sup>19,</sup>20 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Cadwell (US patent 5,028,876).

As per claim 20, Cadwell teaches an apparatus, comprising: an input block to provide an input signal to a common terminal (22) of a first capacitor (C1) and a second capacitor (C2) of a sensing block (30); and a converting block to receive a sensed signal from the sensing block in response to applying the input signal, wherein the converting block provides a digital signal based on the sensed signal (Figure 2; col. 6, lines 37-52; col. 8, lines 25-33).

As per claim 23, Cadwell teaches the converting block comprising an integrator to receive the sensed signal from the sensing block and to produce an integrated signal; a comparator to receive the integrated signal and to provide an output signal; and a latch to receive the output signal and to provide a latched output signal (Figure 2; col. 6, lines 37-52; col. 8, lines 25-33).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3, 5-7, 10, 12, 13, 16-18 and 24-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Torregrosa in view of Kemp (US patent 5,528,520).

As per claim 3, Torregrosa teaches the converting block providing a signal indicative of acceleration but does not specifically disclose the signal having a fractional pulse density indicative of acceleration. However, Kemp teaches a calibration circuit for an accelerometer to be used in airbag deployment device, wherein a converting block provides a signal having a fractional pulse density indicative of acceleration (col. 2, line 32).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Torregrosa's calibration circuitry with Kemp's calibration circuitry for the purpose of providing a digital signal to be used in the determination of whether to deploy an airbag.

As per claim 5, Kemp teaches the converting block being configured to integrate the sensed signal and provide a first output signal and a second output signal (Figure 1).

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As per claim 6, Kemp teaches the converting block being further configured to compare the first output signal and the second output signal and provide an output signal (Figure 1).

As per claim 7, Torregrosa and Kemp teach the converting block coupled to provide the output signal to the input block (Figures 5 and 1, respectively).

As per claims 10 and 24, Torregrosa teaches applying one voltage value to the apparatus but does not specifically disclose a storage unit to store one or more voltage values to apply to the apparatus. However, Kemp teaches a storage unit (22) to store one or more voltage values to apply to the apparatus (Figure 1; col. 3, line 5).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Torregrosa's calibration circuitry with Kemp's calibration circuitry for the purpose of calibrating the accelerometer based on the type of sensor used.

As per claim 12, Torregrosa teaches the converting block providing a signal indicative of acceleration but does not specifically disclose providing a digital signal based on the sensed signal. However, Kemp teaches a calibration circuit for an accelerometer to be used in airbag deployment device, wherein a converting block provides a digital signal having a fractional pulse density indicative of acceleration (col. 2, line 32).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Torregrosa's calibration circuitry with

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Kemp's calibration circuitry for the purpose of providing a digital signal to be used in the determination of whether to deploy an airbag.

As per claim 13, Kemp teaches providing the signal having a fractional pulse density that is indicative of acceleration (col. 2, line 32).

As per claim 16, Kemp teaches integrating the sensed signal and providing a first output signal and a second output signal (col. 4, line 43+).

As per claim 17, Kemp teaches comparing the first output signal and the second output signal and providing an output signal (col. 2, line 63).

As per claim 18 Kemp teaches providing the first signal and second signal based at least in part on the output signal (Figure 1).

As per claim 25, Torregrosa teaches all the limitations except being implemented in a restraint system. However, Kemp teaches an accelerometer used in a restraint system to determine whether to deploy an airbag (col. 6, line 11).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Torregrosa's calibration circuitry with Kemp's calibration circuitry for the purpose of providing a signal to be used in the determination of whether to deploy an airbag.

As per claim 26, Kemp teaches the deployment block being coupled to provide the activation signal to activate an airbag (Figure 1).

As per claim 27, Kemp teaches the sensing circuit being coupled to be clocked via a plurality of non-overlapping clocks (col. 5, line 33).



As per claim 28, Torregrosa teaches the converting block providing a signal indicative of acceleration but does not specifically disclose providing a digital signal based on the sensed signal. However, Kemp teaches a calibration circuit for an accelerometer to be used in airbag deployment device, wherein a converting block provides a digital signal having a fractional pulse density indicative of acceleration (col. 2, line 32).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Torregrosa's calibration circuitry with Kemp's calibration circuitry for the purpose of providing a digital signal to be used in the determination of whether to deploy an airbag.

As per claim 29, Kemp teaches the sensing circuit being coupled to provide a signal having a fractional pulse density that is indicative of acceleration (col. 2, line 32).

As per claim 30, Torregrosa teaches applying one voltage value to the apparatus but does not specifically disclose a storage unit to store one or more voltage values to apply to the apparatus. However, Kemp teaches a storage unit (22) to store one or more voltage values to apply to the apparatus (Figure 1; col. 3, line 5).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Torregrosa's calibration circuitry with Kemp's calibration circuitry for the purpose of calibrating the accelerometer based on the type of sensor used.

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7. Art of general nature relating to capacitive sensors has been cited for applicant's review.

**Communication with PTO**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberto Rios whose telephone number is (571) 272-2056. In the event that Examiner Rios cannot be reached, his supervisor, Brian Sircus may be contacted at (571) 272-2800, ext. 36. The fax number for Before-Final communications and After-Final communications is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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